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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,222	08/28/2003	Mohit Kapur	YOR920030306US1	6362
7590 Ryan, Mason & Lewis, LLP 90 Forest Avenue Locust Valley, NY 11560		11/27/2007	EXAMINER BRITT, CYNTHIA H	
			ART UNIT 2117	PAPER NUMBER
			MAIL DATE 11/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/650,222

Applicant(s)

KAPUR ET AL.

Examiner

Cynthia Britt

Art Unit

2117

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

Claims 1-17 are pending in the present application.

In view of the appeal brief filed on February 28, 2006, PROSECUTION IS  
HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the  
following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply  
under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed  
by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and  
appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth  
in 37 CFR 41.20 have been increased since they were previously paid, then appellant  
must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by  
signing below:



NASSER MOAZZAMI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

***Response to Arguments***

Applicant's arguments, see page 6, filed 6/29/07, with respect to 35 U.S.C.112 first paragraph rejection of claims 1-17 have been fully considered and are persuasive. The 35 U.S.C.112 first paragraph rejection has been withdrawn.

Applicant's arguments, see section 3 beginning on page 7, filed 6/29/07, with respect to claims 1, 2, 4-7, 9-12 and 17 have been fully considered and are persuasive. The 35 U.S.C. 103 rejection of 3/21/07 has been withdrawn.

Applicant's arguments, see section 4 beginning on page 12, filed 6/29/07, with respect to claims 3 and 8 have been fully considered and are persuasive. The 35 U.S.C. 103 rejection of 3/21/07 has been withdrawn.

Applicant's arguments, see section 5 beginning on page 13, filed 6/29/07, with respect to claims 13-16 have been fully considered and are persuasive. The 35 U.S.C. 103 rejection of 3/21/07 has been withdrawn.

Applicant's arguments filed 6/29/07 have been fully considered but they are not persuasive with respect to the 35 U.S.C.112 second paragraph rejection.

In response to applicant's argument that the specification teaches certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., 'the "device" recited in claims 1, 6 and 11 refers to the PRBS checker 430, whereas the "device" recited in claim 12 refers to DUT 420', and 'the delayed PRBS is generated when the incoming bits from DUT 420 are shifted directly into the shift register chain. Thus, as different signals, an error can be detected by comparing a portion of the delayed PRBS with a portion of the PRBS received by the device. The

relationship between the PRBS received by the device and the delayed PRBS is that the PRBS received by the checker is that which is being shifted directly into the shift register chain, thus generating the delayed PRBS. The PRBS is outputted from the DUT and shifted directly into the shift register chain, the outputs of registers R2 and R1 are fed to XOR gate RX0, and the output of RX0 is compared with the incoming bit from DUT 420. (See the specification at page 6, lines 10-26). In claim 12, the accuracy of PRBS received by a DUT is checked at the PRBS checker, not the DUT. It may further assist the Examiner's understanding to refer to page 5, lines 3-11, that explains how the PRBS generator (310 and 410) operates, and thus how the PRBS checker functions') are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir.1993).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 6 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear whether the delayed

signal is the same signal as the input signal or is it a new signal. From the claim language it can be interpreted that the two signals are the same with just an added delay (such as a test signal and an expected value signal?) and therefore it is not clear how the error will be detected, as the same signals are being compared with each other. The claim language does not disclose that either the PRBS or the delayed PRBS would propagate through a device or a device under test or any other circuitry which would cause a change or error in the bit sequence prior to a comparison, only that they both are received by a device and that the delay signal is delayed.

Claims 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what the relationship is between the input PRBS and the output PRBS. The word "generating" refers to a new signal being generated, therefore if a new signal is being generated in response to the input signal then there is always going to be a mismatch. It is not clear whether the PRBS is being checked for errors or the DUT is being tested if it propagates the PRBS without any manipulation.

Claims 1, 6, 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between the input signal and the output signal. What are they being compared for when they are essentially the same signals.

Claims 1, 6, 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: DUT. From the claim language it may be implied that the DUT is being tested on whether the PRBS passes through it without any propagation errors, and hence the comparison of the same signals is being made. Therefore, there is a need to include the DUT, if that is the claimed inventions.

As per claims 2-5, 7-10, and 13-17, these claims are dependent on the independent claims 1, 6, and 12 and therefore inherit the 35 U.S.C. 112, second paragraph issues of the independent claims. As such these claims may not be further considered with respect to the prior art.

The following rejections are given based on the examiner's understanding of the claimed invention.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 6, 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. U. S. Patent No. 7,168,027.

As per claim 1, Lee et al. substantially teaches the claimed method of checking the accuracy of a pseudorandom bit sequence (PRBS) received by a device, the method comprising the steps of: delaying the PRBS received by the device to generate a delayed PRBS; detecting the presence of an error bit in the PRBS received by the device by comparing at least a portion of the delayed PRBS with at least a portion of the PRBS received by the device; wherein the detected error bit represents a mismatch between the delayed PRBS and the PRBS received by the device (column 1 line 64 through column 2 line 30). Not taught by Lee et al. is prohibiting propagation of the detected error bit in the delayed PRBS. However, it is well known in the art to correct

single bit errors and also to mask errors in order to prevent propagation of errors into and/or through a system. Therefore, it would have been obvious for a person having ordinary skill in the art at the time this invention was made to use either an error correction method or a masking method to prevent error propagation.

As per claim 6, Lee et al. substantially teaches the claimed apparatus for checking the accuracy of a pseudorandom bit sequence (PRBS) received by a device, the apparatus comprising: a memory; and at least one processor coupled to the memory and operative to: (i) delay the PRBS received by the device to generate a delayed PRBS; (ii) detect the presence of an error bit in the PRBS received by the device by comparing at least a portion of the delayed PRBS with at least a portion of the PRBS received by the device; and (iii) prohibit propagation of the detected error bit in the delayed PRBS; wherein the detected error bit represents a mismatch between the delayed PRBS and the PRBS received by the device (column 1 line 64 through column 2 line 30). However, it is well known in the art to correct single bit errors and also to mask errors in order to prevent propagation of errors into and/or through a system. Therefore, it would have been obvious for a person having ordinary skill in the art at the time this invention was made to use either an error correction method or a masking method to prevent error propagation.

As per claim 11, Lee et al. substantially teaches the claimed article of manufacture for checking the accuracy of a pseudorandom bit sequence (PRBS) received by a device, comprising a machine readable medium containing one or more programs which when executed implement the steps of: delaying the PRBS received by

the device to generate a delayed PRBS; detecting the presence of an error bit in the PRBS received by the device by comparing at least a portion of the delayed PRBS with at least a portion of the PRBS received by the device; wherein the detected error bit represents a mismatch between the delayed PRBS and the PRBS received by the device. Not taught by Lee et al. is prohibiting propagation of the detected error bit in the delayed PRBS (column 1 line 64 through column 2 line 30). However, it is well known in the art to correct single bit errors and also to mask errors in order to prevent propagation of errors into and/or through a system. Therefore, it would have been obvious for a person having ordinary skill in the art at the time this invention was made to use either an error correction method or a masking method to prevent error propagation.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ajima et al. U.S. 5,390,199.

As per claim 12, Ajima et al. substantially teach the claimed apparatus for checking the accuracy of an output pseudorandom bit sequence (PRBS) generated by a device in response to an input PRBS received by the device, the apparatus comprising: a shift register chain; a logic gate coupled to the shift register chain and the device for detecting, for a given clock cycle, the presence of an error bit in the output PRBS, the error bit representing a mismatch between the input PRBS and the output PRBS; and at least one logic detector coupled to the logic gate for generating, in response to detection of the presence of the error bit, a logic value that causes the inversion of the

error bit after waiting for a clock cycle so as to prohibit further propagation of the error bit through the shift register chain (column 5 line 28-58). Not taught by Ajima et al. is the logic value that causes the inversion of the error bit after waiting for a clock cycle so as to prohibit further propagation of the error bit through the shift register chain. However, it is well known in the art to correct single bit errors and also to mask errors in order to prevent propagation of errors into and/or through a system. Therefore, it would have been obvious for a person having ordinary skill in the art at the time this invention was made to use either an error correction method or a masking method to prevent error propagation.

### ***Conclusion***

The examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage taught by the prior art or disclosed by the examiner.

The examiner invites applicant to call and schedule an interview if there are issues regarding the above rejections that could be better clarified by discussion of the issues, particularly the 112 issues.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Britt whose telephone number is 571-272-3815. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on 571-272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Cynthia Britt  
Primary Examiner  
Art Unit 2117